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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/558,088	11/23/2005	Hiroyuki Ozaki	050605	3388

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KRATZ, QUINTOS & HANSON, LLP
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EXAMINER

LEE, RIP A

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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01/24/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/558,088	OZAKI ET AL.	
	Examiner	Art Unit	
	Rip A. Lee	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 14-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 22 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>08-06-2007</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1796

DETAILED ACTION

This office action follows a response filed on October 25, 2007. Original claims 1 and 2 were amended. New claims 3-23 were added.

Election/Restrictions

1. Newly submitted claims 14-21 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The present application is a 371 of PCT/JP04/09708. Originally filed claims of the PCT application (now WO 2005/003229) and of the instant application contain only two claims 1 and 2, drawn to an emulsion composition of modified polypropylene. Newly submitted claims 14-21 are drawn to a process for producing an emulsion composition of modified polypropylene.

The two sets of inventions are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). Here, the claimed product can be made by another and materially different process such as reactive extrusion of a radically polymerized polypropylene, followed by dispersing polymer. Alternatively, modification may be carried out by preparing an emulsion of polypropylene followed by chemical modification of the emulsified polypropylene.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 14-21 have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Art Unit: 1796

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-6 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The amended claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to a modified polypropylene having a racemic diad fraction $[r]$ of 0.12 to 0.50. Case law holds that, with respect to changing numerical range limitations, analysis must take into account which ranges one skilled in the art would consider inherently supported by the discussion in the original disclosure, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). The disclosure finds support for those polymer having $[r]$ of 0.51 to 0.88, and particularly 0.55 to 0.84 (specification, page 29), and there is a sufficient showing of working examples (table 1) that support these ranges. However, there is no apparent support for the range of 0.12 to 0.50, with particular recognition of 0.50 as critical. Table 1 provides only one example of polymer exhibiting $[r]$ of 0.32, and this single example is not deemed to fully support the claimed range of 0.12 to 0.50.

Art Unit: 1796

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 7-13 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakabayashi *et al.* (U.S. 6,887,944) in view of Okamoto *et al.* (JP 8-176374) and Hisada *et al.* (JP 5-59236).

Wakabayashi *et al.* discloses modified polypropylene having an upper limit of racemic diad [*r*] of 0.51-0.88 (col. 12, line 28-col. 13, line 46), with modification number of 1-500 (col. 14, line 5). The prior art does not disclose an emulsion of said modified polypropylene. However, the inventors teach that inventive modified polypropylenes find similar end use as that recited in instant claims, namely, paints, surface modifier, primer, ink, coatings, and adhesives (col. 14, lines 29-33). Coatings and adhesive emulsions are well established in the art. With respect to modified polyolefins, they may be used in the form of emulsions as shown in the prior art of Okamoto and Hisada. Thus, it would have been obvious to one having ordinary skill in the art to use polymers of Wakabayashi *et al.* in the form of an emulsion and thereby arrive at the subject matter of instant claims 7, 9, and 23.

The prior art is silent with respect to the spectral properties of polymer, as recited in instant claims 7, 10, and 11, and while polymers appear to highly soluble in toluene (col. 19, lines 38-44), the solubility is not quantified. However, in view of the fact that the polymer is substantially the same as that described in the instant claims, a reasonable basis exists to believe that it exhibits substantially the same spectral properties and the solubility values of instant claims 8, 12, and 13. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Art Unit: 1796

6. Claims 1-6 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakabayashi *et al.* (U.S. 6,887,944) in view of Okamoto *et al.* (JP 8-176374) and Hisada *et al.* (JP 5-59236).

Wakabayashi *et al.* discloses modified polypropylene having an upper limit of racemic diad [*r*] of 0.51-0.88 (col. 12, line 28-col. 13, line 46), with modification number of 1-500 (col. 14, line 5).

The deficiency of Wakabayashi *et al.* is that the prior art discloses polymer exhibiting a racemic diad [*r*] of 0.51, while the present claims recite a polymer exhibiting a racemic diad [*r*] of 0.50. It is apparent, however, that the instantly claimed syndiotactic diad value and that taught by Wakabayashi *et al.* are so close to each other that the fact pattern is similar to the one in *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) or *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) where, despite a slight difference in the ranges, the court held that such a difference did not “render the claims patentable,” or, alternatively, that “a *prima facie* case of obviousness exists where the claimed range and prior art range do not overlap, but are close enough so that one skilled in the art would have expected them to have the same properties.”

In light of the case law cited above, and given that there is only a slight microstructural, *but not compositional*, difference between the polymers exhibiting [*r*] of 0.51, as disclosed by Wakabayashi *et al.*, and the polymers exhibiting [*r*] of 0.50, recited in the present claims and further, given the fact that no criticality is disclosed in the present invention with respect to the racemic diad content of 0.50, it would have been obvious to one of ordinary skill in the art that the polymer exhibiting [*r*] of 0.50 recited in the present claims is but an obvious variant of the polymer exhibiting [*r*] of 0.51 disclosed in the prior art, and accordingly, one of ordinary skill in the art would have arrived at the claimed invention.

The prior art does not disclose an emulsion of said modified polypropylene. However, the inventors teach that inventive modified polypropylenes find similar end use as that recited in instant claims, namely, paints, surface modifier, primer, ink, coatings, and adhesives (col. 14, lines 29-33). Coatings and adhesive emulsions are well established in the art. With respect to modified polyolefins, they may be used in the form of emulsions as shown in the prior art of

Art Unit: 1796

Okamoto and Hisada. Thus, it would have been obvious to one having ordinary skill in the art to use polymers of Wakabayashi *et al.* in the form of an emulsion and thereby arrive at the subject matter of instant claims 1, 3, and 22.

The prior art is silent with respect to the spectral properties of polymer, as recited in instant claims 4-6, and while polymers appear to highly soluble in toluene (col. 19, lines 38-44), the solubility is not quantified. However, in view of the fact that the polymer is substantially the same as that described in the instant claims, a reasonable basis exists to believe that it exhibits substantially the same spectral properties and the solubility value of instant claim 2. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

7. Claims 7-13 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita *et al.* (U.S. 5,252,677) in view of Woodhams (U.S. 4,442,243).

Tomita *et al.* discloses a method of making sulfonated polypropylenes in which the polypropylene has a racemic triad [*rr*] of at least 0.7 (claims 1-6). A racemic triad [*rr*] of 0.7 corresponds approximately to a racemic diad [*r*] of $\sqrt{0.7} = 0.83$. Since the functional group is introduced at the polymer terminus, there is at least one functional group per molecule

Although the inventors suggest some end uses for the polymer, they do not disclose the end product in the form of an emulsion. Woodhams teaches use of sulfonated polypropylene polymer as a binding aid for mica/propylene composites (see discussion, column 3). One method of preparing such composites involves pretreatment of mica with an emulsion of the derivatized polypropylene. It would have been obvious to one having ordinary skill in the art to use the sulfonated polypropylene as a binding agent for making the composites of Woodhams and thereby arrive at the subject matter of the instant claims, and since this end use is disclosed in the prior art, one having ordinary skill in the art would have expected such an embodiment to work with a reasonable expectation of success. In summary, the subject matter of instant claims 7, 9, and 23 are obvious over the combined references.

The prior art is silent with respect to the spectral properties of polymer, as recited in instant claims 7, 10, and 11, and the reference does not quantify polymer solubility as per instant

Art Unit: 1796

claims 8, 12, and 13, however, in view of the fact that the polymer is substantially the same as that described in the instant claims, a reasonable basis exists to believe that it exhibits substantially the same properties. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 7-13 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of Wakabayashi *et al.* (U.S. Patent No. 6,887,944) in view of Okamoto *et al.* (JP 8-176374) and Hisada *et al.* (JP 5-59236).

Both sets of claims are drawn to substantially the same modified polypropylene having racemic diad [r] of 0.51-0.88. The difference between the sets of claims is that the present invention is drawn to an emulsion of modified polypropylene. The claims of the prior art are drawn to modified polypropylene only. However, the prior art teaches that the modified

Art Unit: 1796

polypropylene of the invention find end use in paints, coatings, and adhesives (col. 14, lines 29-33). Modified polyolefins used in this fashion are in the form of emulsions as shown in the prior art of Okamoto and Hisada. It would have been obvious to one having ordinary skill in the art to use polymers of Wakabayashi *et al.* in the form of an emulsion and thereby arrive at the subject matter of the instant claims.

Another difference between the sets of claims is that the present claims recite a series of physical properties associated with the polymer whereas the claims of the prior art are silent with respect to these physical properties. However, in light of the fact that the polymers of both inventions are substantially the same, one of ordinary skill in the art would reasonably expect substantially the same materials will exhibit substantially the same properties.

Response to Arguments

10. The rejection of claims 1 and 2 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims of Wakabayashi *et al.* (U.S. Patent No. 6,887,944) in view of Okamoto *et al.* (JP 8-176374) and Hisada *et al.* (JP 5-59236), set forth in the previous office action of July 25, 2007, has been withdrawn in light of amendment of claims.

The rejection of claims 1 and 2 over Wakabayashi *et al.* in view of Okamoto *et al.* and Hisada *et al.*, set forth in the previous office action has withdrawn in view of claim amendments.

The rejection of claims 1 and 2 over Tomita *et al.* (U.S. 5,252,677) in view of Woodhams (U.S. 4,442,243), set forth in the previous office action, has withdrawn in view of claim amendments.

Art Unit: 1796

Conclusion

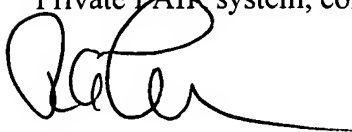
11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu S. Jagannathan, can be reached at (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).



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January 19, 2008